



PORT of  
**vancouver**

# **PROJECT AND ENVIRONMENTAL REVIEW REPORT**

**PER NO. 19-162**

**WESTRIDGE MARINE TERMINAL UPGRADE AND  
EXPANSION**

Prepared for:  
Project and Environmental Review Committee

## Table of Contents

Table of Contents .....	i
1. INTRODUCTION .....	1
2. PROJECT DESCRIPTION .....	2
2.1 Proposed Works .....	3
2.2 Proposed Construction Methods and Phasing .....	5
3. VANCOUVER FRASER PORT AUTHORITY INTERNAL REVIEWS .....	6
3.1 Planning .....	6
3.1.1 Land Use Designation .....	6
3.1.2 Building Permit Requirements .....	6
3.2 Engineering .....	6
3.3 Transportation .....	7
3.4 Marine Operations .....	8
3.5 Environmental Programs .....	9
4. STAKEHOLDER CONSULTATION .....	10
4.1 Municipal Consultation .....	10
4.2 Adjacent Tenant Consultation .....	11
4.3 Marine Users Consultation .....	11
4.4 Industry Association and Railway Consultation .....	11
4.5 Stakeholder Consultation Conclusion .....	12
5. PUBLIC CONSULTATION .....	12
5.1 Summary of Public Consultation .....	12
5.2 Public Consultation Conclusion .....	15
6. INDIGENOUS CONSULTATION .....	15
6.1 Scope of Indigenous Consultation .....	15
7. CONCLUSION & RECOMMENDATION .....	26
APPENDIX A Location Plan .....	27
APPENDIX B List of Information Sources .....	28

		<b>2.1 VANCOUVER FRASER PORT AUTHORITY PROJECT AND ENVIRONMENTAL REVIEW 3.1 REPORT</b>
<b>PER No.:</b>	<b>19-162</b>	
<b>Tenant:</b>	<b>Trans Mountain Pipeline ULC</b>	
<b>Project:</b>	<b>Westridge Marine Terminal Upgrade and Expansion</b>	
<b>Project Location</b>	<b>7065 Bayview Drive, Burnaby</b>	
<b>VFPA SID No.:</b>	<b>BBY 092</b>	
<b>Land Use Designation:</b>	<b>Port Terminal</b>	
<b>Applicant(s):</b>	<b>Trans Mountain Pipeline ULC</b>	
<b>Category of Review:</b>	<b>Designated</b>	
<b>Recommendation:</b>	<b>That PER No. 19-162 for Westridge Marine Terminal Upgrade and Expansion be approved.</b>	

## 1. INTRODUCTION

The Vancouver Fraser Port Authority (VFPA), a federal port authority, manages lands under the purview of the *Canada Marine Act*, which imparts responsibilities for environmental protection. VFPA accordingly conducts project and environmental reviews of works and activities undertaken on these lands to ensure that the works and activities will not likely cause significant adverse environmental effects. This project and environmental review report documents VFPA's project and environmental review of PER No. 19-162: Westridge Marine Terminal Upgrade and Expansion (Project) proposed by Trans Mountain Pipeline ULC (Applicant).

This project and environmental review was carried out to address VFPA's responsibilities under the *Canada Marine Act*, and Section 5 of the Port Authorities Operations Regulations. The Project is a portion of the Trans Mountain Expansion Project (TMEP) which is a Designated Project under the *Canadian Environmental Assessment Act, 2012* (CEAA, 2012). Accordingly, a federal environmental assessment review was previously conducted by the National Energy Board (NEB) for TMEP to fulfil the requirements of both the *National Energy Board Act* (NEB Act) and CEAA, 2012.

On May 19, 2016, the NEB recommended the Governor-in-Council approve TMEP, subject to 157 conditions. The NEB concluded TMEP was not likely to cause significant adverse environmental effects and found TMEP to be in the public interest. On November 29, 2016, the Governor-in-Council of the Government of Canada directed the NEB to issue a Certificate of Public Convenience and Necessity for TMEP. On August 28, 2017, VFPA issued a project permit (PER No. 15-322) to Kinder Morgan Canada (Kinder Morgan) following their permit application submission to upgrade and expand a portion of the Westridge Marine Terminal (the Terminal). Some of the construction works and activities of the Project were completed or partially completed under PER No. 15-322.

On August 30, 2018, the Federal Court of Appeal issued a decision in *Tsleil-Waututh v. Canada* (AG) 2018 FCA 153, which set aside the Order in Council, rendering the Certificate of Public Convenience and Necessity for TMEP a nullity. As a result, PER No. 15-322 issued by VFPA in August 2017 was no longer valid.

On September 20, 2018, the Government of Canada directed the NEB to reconsider its recommendations as they related to project-related marine shipping. After conducting the reconsideration of the Project, the NEB concluded that the Project is likely to cause significant adverse environmental effects. The NEB considered that in light of the considerable benefits of the

Project, the measures to mitigate the effects, and the recommendations by the NEB, that these effects can be justified and recommended that the Governor-in-Council approve TMEP. On June 18, 2019, the Government of Canada approved TMEP, subject to 156 conditions.

The Project and Environmental Review for this Project has taken into account the review of application materials previously submitted and approved under PER No. 15-322 and resubmitted as part of this application. The Project and Environmental Review for this Project focused on the following changes from the Project previously submitted and approved under PER No. 15-322:

- Updated construction hours to undertake work outside of VFPA's standard construction hours, comprising nighttime welding activities for the duration of the construction period to minimize the impact of high tide cycles on welding efficiency;
- Updated noise baseline limits for construction noise monitoring to reflect the current ambient noise baseline conditions at the Terminal. This is based on baseline noise monitoring undertaken by the Applicant in September 2018;
- The temporary re-location of an existing utility dock from Pier 59 to Pier 61 during construction. This change was approved as a minor amendment to PER No. 15-322 in November 2017; and,
- Updated construction schedule with an anticipated completion date of the fourth quarter of 2022.

The above changes resulted in amendments to 15 technical reports and documents previously submitted under PER No. 15-322. The remainder of the technical reports and documentation submitted under PER No. 15-322 remain unchanged.

The Project and Environmental Review for this Project does not include a determination of the significance of potential adverse environmental effects. However, through the project and environmental review process, VFPA considers other interests, impacts and mitigations that relate specifically to the details of construction and operation of the Project.

The project and environmental review considered the application along with supporting studies, assessments and consultations carried out or commissioned by the Applicant, as well as other information provided by the Applicant. In addition, this project and environmental review considered other information available to VFPA and other consultations carried out by VFPA. A full list of information sources germane to the review is provided in Appendix B.

This project and environmental review report is NOT a project authorization. This project and environmental review report summarizes the review outcome, and provides the basis for approval or denial. Should the project be approved, the report is accompanied by a project permit (the Permit) and the conclusions described in this report require compliance with the conditions in the Permit.

## **2. PROJECT DESCRIPTION**

The Applicant proposes to upgrade and expand the Terminal at the foot of 7065 Bayview Drive in Burnaby, British Columbia. The Terminal is operated by the Applicant and has been in operation since 1956. The Terminal currently has one dock with one marine berth and covers approximately 13.8 hectares (ha) of water lot area and reclaimed lands.

The Terminal currently handles a mix of crude oil, aviation jet fuel and petroleum products. The jet fuel system is not part of TMEP. In a typical month, five (5) vessels are loaded with crude oil at the Terminal for export. In addition, the Terminal typically loads or receives up to five (5) barges per month of oil and jet fuel. The Terminal currently operates on a 24/7 basis when vessels are at the

berth during loading operations. The Applicant's operations staff are available on call at all other times. The timing of vessel activities is variable from month to month.

The purpose of the proposed Project is to handle a higher volume of various types of crude oil products at the Terminal. The jet fuel system and barge activity is not expected to change as a result of the Project. New and upgraded facilities at the Terminal would include construction of three new marine berths, new metering and vapour control equipment, new and upgraded fire suppression systems, expanded piping, and associated buildings and equipment.

Due to limited existing land area, the Applicant proposes to expand foreshore lands at the Terminal beyond the current shoreline to accommodate the required infrastructure. Proposed upland improvements include a new concrete dock structure supported by circular sheet pile cells and infill near the shoreline. The creation of new marine habitat areas, to offset project impacts on fish and fish habitat, is also part of the Project.

The existing Trans Mountain pipeline system currently handles up to 47,690 m<sup>3</sup>/d (1,684,156 f<sup>3</sup>/d or 300,000 bbl/d). The TMEP will increase the capacity of the overall system to 141,500 m<sup>3</sup>/d (4,997,025 f<sup>3</sup>/d) (890,000 bbl/d). Of that increased capacity, up to approximately 70% or 100,200 m<sup>3</sup>/d (3,538,529 f<sup>3</sup>/d) (630,000 bbl/d) may be delivered to the Terminal for shipment by marine vessel.

Based upon the proposed design, the average loading rate for each berth at the Terminal is expected to be 4,170 m<sup>3</sup>/h (147, 262 f<sup>3</sup>/h) (26,250 bbl/h).

The proposed system would be capable of serving 34 Aframax class vessels per month and would continue to also be capable of serving Panamax class vessels and barges. Actual volume handled would be driven by market conditions. The maximum size of vessels (Aframax class – 250m LOA x 44m beam) served at the Terminal would not change as a result of the Project. Following the completion of the Project, operations at the Terminal would continue to occur on a 24/7 basis.

## 2.1 Proposed Works

### General Description

- Construction of a new three-berth marine Terminal including new pile supported berth structures extending approximately 250 m (820 ft) into Burrard Inlet, new circular sheet pile retaining wall, and land infill in Burrard Inlet
- The construction of associated office and control building, utilities, fire suppression systems and mechanical systems
- Construction of new marine habitat and riparian planting areas
- Sections of new transfer and delivery pipelines and related equipment
- Decommissioning and demolition of certain facilities at the Terminal.

### Site Preparation

- Modifications and relocation of existing utilities; no VFPA owned utilities would be impacted
- Modifications to existing mechanical systems at the Terminal
- Removal of existing Pier 59
- Temporary re-location of an existing utility dock from Pier 59 to Pier 61
- Surface soils and vegetation clearing along the foreshore extension area
- Installation of an in-water circular sheet pile retaining wall
- Densification of existing soils, placement of new imported fill, and compaction of fill behind the retaining wall to create new land in Burrard Inlet

- Rip-rap removal in the foreshore area for construction of a new dock complex and extension into the water
- Removal of abandoned culverts within the foreshore extension area.

### **Marine Berth Expansion and New Operations Facilities**

- Demolition and decommissioning of the existing Terminal berth and associated facilities
- Installation of approximately 152 in-water piles to support new berth structures (piles range in size from approximately 1.4 m (4.59 ft) to 2.0 m (6.56 ft) in diameter)
- Construction of a new three-berth dock complex encompassing approximately 275,000 m<sup>2</sup> (2,960,172 sqft) of water lot area
- New mooring dolphins, pipeline loading and delivery infrastructure, fender systems, vehicular access and utility connections as part of the new dock complex
- Construction of new in-water rock habitat areas (approximately 9,000 m<sup>2</sup> (96,878 sqft)) and riparian plantings (approximately 2,350 m<sup>2</sup> (25,296 sqft))
- Construction of a new crude oil receiving and transfer facility consisting of:
  - A two-story operations building to house offices, a control room for the facilities, first aid facilities and washrooms
  - New ancillary buildings including storage, equipment buildings and electrical kiosks
  - Construction of containment areas for spill protection beneath equipment
  - New Marine Vapor Control System for handling ship vapors during loading operations
  - Foundation construction including foundations for vapor recovery mechanical equipment, electrical buildings and transformers, metering area equipment and piping
  - Installation of structural steel and concrete, mechanical equipment, piping and fire-protection systems
  - A backup generator capable of running core functions and firefighting systems
- A new utility dock including a new float and steel gangway for support vessels of approximately 500 m<sup>2</sup> (5,382 sqft)
- A new concrete railway derailment protection barrier north of the property line to protect the facility from existing train tracks (320 m (1,050 ft) long by 2.2 m (7.2 ft) high)
- Emergency response booms and areas for deployment of emergency response equipment
- Installation of pre-fabricated dock trestles and platforms
- Modification and relocation of portions of the existing 6.0 m (20 ft) wide access driveway north of the existing CP rail tracks (main access from Bayview Drive)
- New parking spaces for employees/contractors, visitors and maintenance personnel
- Perimeter security fencing with new vehicle access gates.

### **Lighting and Utilities**

- New lighting at the Terminal on buildings, new area lights on dock structures and new marine navigation lighting
- Upgrades to the Terminal fire protection system and new perimeter fire hydrants
- New electrical transformers
- New dock delivery lines and metering equipment
- Emissions management equipment and control system
- A new fire-water and foam pumping system
- New electrical equipment and control system
- A stormwater management system including new oil water separators
- Stormwater detention on berths to collect water that is pumped to an oil water separator system on foreshore
- Extension of one existing stormwater outfall, relocation of one existing stormwater outfall and installation of one new stormwater outfall

- Installation of new underground wastewater and sanitary holding tanks
- New utilities including stormwater, sanitary tank connections, water, communications and electricity
- Installation of new electrical systems such as cable trays and cabling.

### **Onshore and Marine Construction Temporary Facilities**

- Barges with office, lunchroom and washroom facilities
- Storage barges with equipment and material storage areas
- Marine equipment including barge mounted derricks for pile driving and supporting barges
- Installation of a safety boom around marine work areas during construction extending approximately 350 m into Burrard Inlet and anchored at each end by a new pile
- Office trailers
- Washroom trailers
- Equipment storage trailers
- Water treatment plants.

Demolition of the existing terminal berth is not part of the current permit application. The existing berth would no longer be operable following construction of the Project. Should the Project be approved, the Applicant has committed to submitting a separate VFPA project permit application to demolish the existing berth following the completion of the construction period.

As previously noted, some of the construction works and activities of the Project listed above were completed or partially completed under PER No. 15-322.

## **2.2 Proposed Construction Methods and Phasing**

The Project is proposed to be constructed continuously over an approximately 3.5-year period recommencing in fall of 2019, with updated completion scheduled for Q4 2022. The foreshore work, near shore works and berths 1 and 2 are proposed to be completed first, followed by berth 3.

Site clearing and rip-rap removal would be followed by excavation in the foreshore area to address underlying soil conditions and ensure stability of the foreshore area in a seismic event. Barge mounted impact and vibratory pile driving would be required to construct the new dock complex. The majority of marine construction is proposed from the water, using marine derricks and related equipment. Marine construction equipment would be staged in the waterlot up to approximately 100 m (328 ft) beyond the footprint of the expanded dock. Some construction equipment would be land based (working into the water from shore). No dredging is proposed or required for the Project. The Terminal will continue to operate during the construction works.

Parking on the infilled area would remain for operations employees and contractors. During construction, a temporary construction parking area would be required at offsite staging areas and construction personnel would be transported to and from the work site by employee bus or water taxi. All workers would access the site from Bayview Drive or via water from Burrard Inlet. A secondary access road at the foot of North Cliff Avenue in Burnaby is proposed to be used as an alternate access for special custom loads and emergency vehicles only.

Generally, construction activities would be conducted between 7:00am and 8:00pm, Monday to Saturday, in accordance with regular VFPA construction hours. Limited non-motorized hand labor type activities are proposed at any time. In addition, in order to account for tidal constraints, night-time (8:00pm to 7:00am including Saturday night into Sunday morning) welding works related to shear lug installation for the mooring dolphins would also be undertaken for the duration of the

project construction. All pile driving would occur within regular VFPA construction hours (Monday to Saturday between the hours of 7:00am to 8:00pm).

Should any activities other than night-time welding and non-motorized hand labor type activities be desired outside of regular VFPA construction hours, the Applicant would be required to obtain a separate VFPA authorization to conduct such works.

### **3. VANCOUVER FRASER PORT AUTHORITY INTERNAL REVIEWS**

The following VFPA departments have reviewed the application and have the following Project considerations.

#### **3.1 Planning**

Planning has reviewed the application and has the following comments.

##### ***3.1.1 Land Use Designation***

The Terminal is designated as 'Port Terminal' within VFPA's Land Use Plan. The Project is considered to be in conformance with the Land Use Plan.

##### ***3.1.2 Building Permit Requirements***

The proposed terminal receiving and transfer systems, terminal support buildings, access and emergency and fire suppression systems require review under the 2015 National Building Code (NBC) and 2015 National Fire Code of Canada (NFC). The Applicant is required to obtain a VFPA Building Permit before proceeding with construction of works subject to the Code, and must obtain VFPA occupancy approval before occupying or commencing regular operations of those structures and systems.

Building Permits are also anticipated to be required for some temporary structures proposed for the duration of construction, whether on barges or on land.

VFPA's building code consultant provided initial findings with respect to fire and life safety of components the Project, concluding that the Project is feasible from a Code compliance standpoint, provided that a number of additional fire protection and life safety measures are built into the Project as it moves toward the building permit stage. These measures are reflected in the requirements set out in Permit conditions No. 23, 24, 25 31, 44 and 57.

#### **3.2 Engineering**

The Project consists of pile-supported structures including three berths, loading platforms, access trestle to support roadway connecting the berths, mooring dolphins and utility dock. A free-standing cellular bulkhead will extend the existing site grades to the new foreshore, facilitating new upland infrastructure such as service buildings and pipe facilities.

The loading platforms and access trestles are designed to support vehicles (axle loads up to the full highway legal limit) and mobile cranes (up to 35 tonnes lifting capacity). As set out in Appendix G of the submitted Geotechnical Report, in general, the marine structures are designed to meet the requirements of the Canadian Highway Bridge Design Code, CSA-S6 (2014), and are classified as 'Major Route' for the purposes of defining structural performance during and after an earthquake. Where required, the structural design will also be guided by ASCE/COPRI 16-14 (Seismic Design of Piles and Wharves).

Existing stormwater outfalls will be relocated or modified as required by the Project. No other VFPA-owned utilities are known to be located within the proposed project area.

Engineering has reviewed the application and supports the recommendation to approve the Project subject to adherence to the project and environmental conditions in the Permit.

### **3.3 Transportation**

VFPA staff assessed the road and rail impacts of the Project during construction and operation as well as impacts to the existing CP Rail crossing approach within VFPA jurisdiction, proposed parking arrangement on site, internal circulation driveways and access to and from the site. The Project is not anticipated to increase traffic on the local road network during construction or operations. The product is transported via pipeline, and terminal staffing requirements are minimal, with the occasional service vehicle or delivery. The majority of construction and operational personnel within VFPA jurisdiction are expected to arrive and depart by marine vessel.

All regular road access to and from the site for contractors and existing terminal staff are proposed to be via the existing driveway connecting to Bayview Drive. The existing secondary access road at the foot of North Cliff Avenue in Burnaby is proposed to be used as an alternate access for special custom loads and emergency vehicles only. Road access to and from the site will remain unchanged during construction and operations.

Within the Terminal, a new asphalt parking area and driveway connections to the new dock complex and Terminal buildings are proposed to be installed on the newly created land area in Burrard Inlet. The new dock complex would also include a driveway approximately 6.0 m (19.7 ft) in width (one-way traffic only) to provide Terminal vehicles and motorized equipment access to each of the three new berths. There are two existing driveways which have private at-grade crossings across the existing CP rail tracks within the existing terminal footprint. The width of the current driveway design encroaches onto CP Rail right of way immediately to the south of VFPA jurisdiction and would need to be modified as part of the Project.

The additional crude oil delivery pipelines are proposed to be directionally drilled under the CP Rail right of way from the south into VFPA jurisdiction. The existing overhead pipeline delivery system spanning the CP Rail right of way is proposed to remain and a new overhead electrical power line over the CP Rail tracks would be installed terminating within VFPA jurisdiction.

A new concrete derailment protection barrier is proposed on the north side of the existing rail tracks within VFPA jurisdiction. The purpose of this barrier is to protect the new terminal infrastructure north of the rail tracks in the case of a train derailment.

As part of their application, the Applicant has indicated their intent to store construction materials and equipment on portions of the CP Rail right of way. This is not part of the application to VFPA and requires separate approval from CP Rail. The Applicant has confirmed that a license of occupation and crossing agreement with CP Rail is in place for the Project.

The Applicant will be required to submit final design drawings for rail crossing modifications, for review in order for VFPA to confirm that the level crossing, serving as the sole road access to the Terminal, meets current standards. This is reflected in condition No. 22 in the Permit.

Transportation Planning supports the recommendation to approve the Project subject to adherence to the project and environmental conditions in the Permit.

### 3.4 Marine Operations

Marine Operations reviewed the application to determine if the construction and operation activities of the expanded Terminal would interfere with navigation, either by obstructing areas of the port, or by interfering with any existing authorized activities. The review also considered proposed vessel operational activities at the expanded Terminal to ensure that appropriate mitigation is included in the Project.

The Project was previously reviewed by the NEB, and by a Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) Review Committee led by Transport Canada. Results of the TERMPOL process were incorporated into the NEB's decision on the Project. During the NEB hearings process, VFPA reviewed and provided comments and requested information from the Applicant on the Project and related maritime shipping activities. The three new proposed berths are designed to handle a range of vessels, including barges, Panamax class tankers (60,000 to 80,000 dead weight tonnage, DWT) and Aframax class tankers (80,000 to 120,000 DWT). Based on existing operational restrictions in effect, the Second Narrows TCZ Procedures TCZ-2 (Port Information Guide, Port of Vancouver), the maximum size of vessel that can navigate to/from the Terminal site is restricted to 48 metres in width (moulded breadth) while loaded to a maximum allowable draft of 13.5 metres. This Project has taken these vessel size restrictions into consideration, and the proposed terminal infrastructure has been designed accordingly.

With respect to vessel maneuvers to and from the proposed marine berths, the application included a maneuvering assessment which validated the design and layout of the Terminal. With respect to passing vessel maneuvers (i.e., vessels not associated with the Terminal), the application included an assessment that confirmed the Terminal design is engineered to acceptable criteria to withstand interactions with passing vessels using the navigation channel in the vicinity of the terminal.

The application includes both operational and physical mitigation measures for vessel operations. The mitigations described in the proposal have been reviewed and accepted by VFPA. These mitigations include, but are not limited to: emergency response plan for reportable spills; spill prevention, containment and clean-up plans; vapour recovery unit(s); and spill containment and clean-up supplies.

The Project would largely be constructed from the water. The Terminal is proposed to be expanded approximately 250 metres into Burrard Inlet, and therefore the maximum marine footprint of construction activities will encroach approximately 350 metres into Burrard Inlet. To ensure the continued safety of all marine users during construction activities, the Project includes a marine construction safety boom around the perimeter of the marine construction area. To accommodate marine construction activities and terminal operations, the marine construction safety boom design includes separate gates for barge and ship traffic. The marine construction safety boom consists of a number of transversely mounted floats under vertical panels. It is held in place by nine (9) steel buoys each 3.3 metres in diameter. Each buoy will have either two (2) or three (3) anchors, as well as chains to hold the buoy in proper position. Solar powered navigation lights (up to 2 NM range), radar reflectors and informational signs will be mounted to the boom in an effort to ensure it is visible to all marine users.

The marine construction safety boom will reduce interactions between marine users and Terminal construction related vessels and equipment. However, some construction related vessel traffic will occur outside of the safety boom. Based on the available navigable water in the vicinity of the marine construction site, it is not anticipated that construction-related vessels and marine equipment will obstruct passage of other vessels. To ensure that all marine users are aware of and kept updated of the activities at the construction site, the Applicant will be required to develop, and

update, a detailed communications plan for each construction phase that will include the establishment of clear communication links using established modern means (including feedback and complaints hotlines).

Marine Operations has reviewed the application and supports the recommendation to approve the Project subject to adherence to the project and environmental conditions in the Permit, in particular Conditions No. 21, 30, 32, 35, 48, 56 and 59.

### 3.5 Environmental Programs

Environmental Programs reviewed this application and determined that there are no substantive changes to the Project proposed on VFPA land compared to the previous application. VFPA reviewed the Governor in Council's environmental decision, and is relying on the 2019 federal environmental decision statement and the 156 conditions.

As part of the Project and Environmental Review of this application and mindful of responsibilities mandated by the *Canada Marine Act*, VFPA Environmental Programs staff identified aspects of the Project that would benefit from additional measures to further mitigate the potential adverse effects identified in the NEB assessment and within VFPA jurisdiction. These aspects are described below:

- **Water quality:** The mitigation of adverse water quality effects that may be generated during operations is addressed through project design, including such things as containment at terminal areas of concern and treatment systems for stormwater from catchment areas of concern. In addition to these, the Permit requires that on-wharf stormwater collection sump pumps be provided with an emergency power supply, to ensure continued operation during power failures. The Applicant's environmental protection plan also addresses mitigation of adverse water quality effects during construction.
- **Vegetation:** The works considered in the NEB assessment did not include the mitigation of loss of marine riparian vegetation. The application for a VFPA Permit includes replacement of some of the marine riparian vegetation that will be lost during construction, and the enhancement of other areas of marine riparian vegetation that would not otherwise be affected by construction. The Applicant's environmental protection plan also addresses mitigation of adverse effects of vegetation loss during construction.
- **Fish and fish habitat:** As part of VFPA's review, the Applicant was required to provide an alternate design option to reduce impacts, such as sediment compaction and substrate sweeping through tidal action, associated with grounding of the marine construction safety boom. The Permit also includes a condition addressing adverse effects of Terminal lighting on fish.
- **Wildlife:** The Applicant's environmental protection plan addresses adverse effects on wildlife during construction. In addition to these, the Permit includes a condition requiring the mitigation of adverse effects on wildlife from Terminal lighting during operation.
- **Noise:** The Applicant's environmental protection plan and noise management plan address adverse effects due to noise. VFPA's review considered recent information regarding baseline noise levels and potential effects of noise generated by activities proposed outside of regular construction hours. The Permit requires compliance with noise thresholds identified by VFPA.

- **Air quality:** The Applicant's environmental protection plan, air emission management plan and fugitive emissions management plan for the Terminal address adverse effects to air quality. In addition to these, the Permit also requires compliance with VFPA's Non-Road Diesel Emissions Fee document.
- **Energy:** The Applicant's project energy report outlines the analysis that will be undertaken to inform process design choices and equipment selection. Completion of this report or a similar study is included as a Permit condition.
- **Weekly Environmental Monitoring Reports:** The Applicant shall provide VFPA with weekly construction monitoring reports containing the same information listed for the monthly construction monitoring reports required by the Fisheries and Oceans Canada (DFO) Paragraph 35(2)(b) Fisheries Act Authorization (DFO Authorization). VFPA shall be copied on the monthly reports to DFO, if these are different from the corresponding weekly VFPA report.
- **Compliance, Monitoring, and Enforcement:** The Applicant shall adhere to VFPA's Compliance, Monitoring, and Enforcement program launched in March 2018. The Applicant shall retain an Independent Monitor, and submit compliance self-reporting bi-annually.

Measures additional to those identified by the NEB assessment are reflected in documents submitted to the VFPA by the Applicant in support of the application for a Permit and in Permit conditions No. 5, 6, 14, 15, 16, 18, 19, 33, 34, 40, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 62, 63 and 64.

Environmental Programs supports the recommendation to approve the Project subject to adherence to the project and environmental conditions in the Permit. The Permit relies on the applicable conditions outlined in the federal decision statement and includes additional conditions that are the result of this Project and Environmental Review.

## 4. STAKEHOLDER CONSULTATION

The Project was assessed to have potential impacts to stakeholders and the local community and consultation activities were determined to be required. The following sections describe the stakeholder and public consultation activities undertaken by the Applicant and VFPA as part of the project and environmental review.

### 4.1 Municipal Consultation

As part of the PER process for PER No. 15-322, VFPA consulted with potentially affected local municipalities. A referral letter was sent to the following municipalities in June 2017, notifying them of the Project:

- City of Burnaby
- District of North Vancouver
- Village of Belcarra

During the previous consultation process, the City of Burnaby and the District of North Vancouver responded with comments on the Project. The Village of Belcarra responded indicating that they did not have comments on the Project. As part of this project and environmental review for the Project, a referral letter was sent to the City of Burnaby, the District of North Vancouver and the

Village of Belcarra on August 19, 2019 notifying them of the Project. VFPA did not receive any further municipal comments in response to the August 2019 referral.

To address the City of Burnaby's comment from the previous referral regarding existing real estate agreements between the City of Burnaby and VFPA, a Permit condition was included to require that prior to any construction activities in and around the City of Burnaby's underground sewer facilities, the Applicant shall contact the City of Burnaby to ensure there are no adverse impacts to the sewer system (Permit condition No. 26).

## **4.2 Adjacent Tenant Consultation**

As part of the PER process for PER No. 15-322, VFPA consulted with adjacent tenants. A referral letter was sent to the following VFPA tenants in June 2017 notifying them of the Project:

- Metro Vancouver
- Island Tug and Barge
- Seaspac ULC
- Shell Canada

VFPA only received comments from Metro Vancouver. No responses were received from other adjacent tenants during the previous consultation process. As part of this project and environmental review for the Project, a referral letter was sent in August 2019 notifying Metro Vancouver of the Project. VFPA did not receive further any comments.

To address Metro Vancouver's comments from the previous referral regarding the potential impact of construction and expanded facility operational activities and the hydraulic impact of marine vessel traffic on Metro Vancouver's underwater storm outfall, Permit conditions were included for construction activities in and around the wastewater outfall system (Permit condition No. 27) and establishment of a restricted area covering the licence outfall area (Permit condition No. 43).

## **4.3 Marine Users Consultation**

As part of the PER process for PER No. 15-322, VFPA consulted with Marine User Groups. A referral letter was sent to the following Marine User Groups in June 2017 notifying them of the Project:

- Council of Marine Carriers
- BC Coast Pilots

No responses were received from marine user groups during the 2017 consultation process. VFPA did not further consult with Marine User Groups as part of this project and environmental review for the Project.

## **4.4 Industry Association and Railway Consultation**

The Project was assessed to be of potential interest to industry associations and adjacent Railways. As part of the PER process for PER No. 15-322, a referral letter was sent to the following companies and organizations in June 2017 notifying them of the Project:

- Canadian Pacific Railway
- BC Chamber of Shipping

- Shipping Federation of Canada
- Pacific Pilotage Authority
- Canada Coast Guard- MCTS Victoria

VFPA did not receive any comments from Industry Associations or Railways during the 2017 consultation process. VFPA did not further consult with Industry Associations or Railways as part of this project and environmental review for the Project.

#### **4.5 Stakeholder Consultation Conclusion**

VFPA has reviewed the record of consultation and related documents and is of the view that the Project has adequately addressed the concerns raised during stakeholder consultation.

### **5. PUBLIC CONSULTATION**

The Project was assessed to have potential impacts to community interests in the surrounding area during construction. These include potential impacts such as construction noise and vehicle traffic.

#### **5.1 Summary of Public Consultation**

A description of the Project and proposed works, including all submitted documents, information on construction activities and mitigations, as well as proposed construction schedule and hours of work, were posted to VFPA's and the Applicant's websites in August 2019. VFPA and the Applicant received no input from the public during the review process.

As part of the PER process for PER No. 15-322, a description of the Project and proposed works, including information on construction activities and mitigations, as well as proposed construction schedule and hours of work, were posted to VFPA's and the Applicant's websites in June 2017.

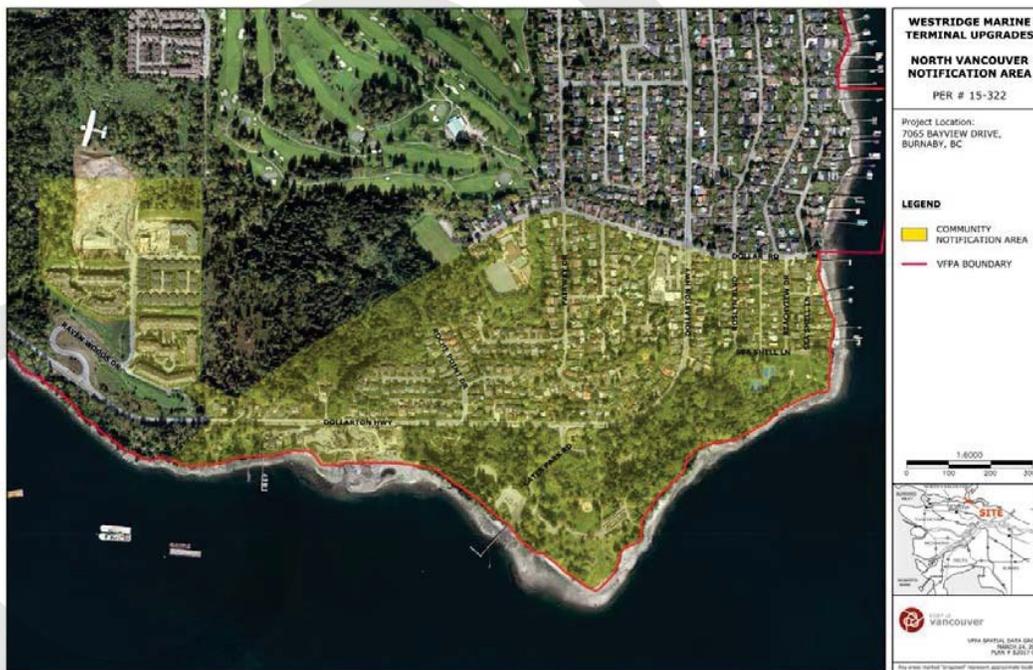
The Applicant's 20-business-day comment period was from June 13, 2017 to July 10, 2017 and the public was able to provide feedback via telephone, mail, and online. A dedicated webpage for the Project was created by the Applicant to inform the public and accept online feedback. Public notification was conducted by the Applicant on June 14, 2017 and June 16, 2017.

#### **Maps of the notification areas:**

Burnaby



North Vancouver



The Applicant received eight responses from the public. Public feedback was mainly related to socio-economic impacts such as visual impacts, noise and vibration from construction activity, project schedule and hours of work. Additional feedback was related to environmental impacts to Burrard Inlet associated with construction and tanker traffic, as well as feedback around emergency response. The Applicant responded to all eight comments in their Consideration Report, and provided additional information to show how they considered the concerns and provided links

to existing reports and studies that were part of their submission to the NEB environmental assessment process. The Applicant provided formal responses to address each of the public comments received. VFPA reviewed the documents and found them both to be acceptable. The reports were posted on VFPA and the Applicant's websites in August 2017. VFPA did not receive any public feedback during the 20-business day comment period in 2017.

The following communication outreach has been undertaken by the Applicant since August 2017.

**Construction Notices:**

- Start of construction notice
  - In early September 2017 printed construction notices were delivered to neighbourhoods in Burnaby and North Vancouver.
  - Start of construction notice was posted on the Applicant's website.
  - Signage was placed on the perimeter fence of the Terminal prior to active construction starting.
- Extended work hours notice
  - In late February and early March, 2018 notification letters regarding authorization to undertake construction work on three Sundays in March 2018 were distributed to neighbourhoods in Burnaby and North Vancouver.
  - The information was posted on the Applicant's website.
  - E-blast was sent to the project construction database (this is a database of interested individuals who have signed up to receive construction updates and notices).
- Construction Newsletter
  - In late July, 2018 printed construction newsletters were delivered to neighbourhoods in Burnaby and North Vancouver.
  - The Applicant's website was updated to reflect the newsletter.
- Holiday greeting card
  - In December 2018, a holiday greetings card was sent to immediate neighbours in north Burnaby. The card passed along thanks for the community's patience during the construction and shut down work, and provided contact information for the Project.

No additional Terminal-specific printed notices were distributed after December 2018.

**Website and online communication:**

The Applicant's website has been regularly updated since August 2017 with general construction and project information such as:

- 38 general articles regarding construction preparation, noise and environmental protection and construction updates.
- 25 marine specific stories regarding navigational safety, spills, and tanker traffic etc.
- In September, 2018, a notice was posted notifying of the Federal Court of Appeal decision to cancel the Order-in-Council, which had approved the CPCN for the Expansion Project.

An interactive map was also added for ease of use. Updates to the website have continued throughout the project site shutdown period.

An e-Newsletter, Trans Mountain Today, was distributed to the construction database on a regular basis throughout this period.

Facebook and Twitter were utilized to further promote the e-Newsletter and the featured story that linked back to the website page content.

**Print and Digital Advertising:**

The Applicant utilized traditional and online geographic specific advertising in Burnaby and North Vancouver to provide information to the public about the project, construction and how to sign up to the project construction database.

- 11 advertisements placed between August, 2017 and March, 2018
- Monthly advertisements placed between April and June 2018

**Presentations and meetings with stakeholders:**

During this time period, the Applicant held 179 engagement events with a variety of stakeholders (including members of the public who had raised complaints regarding construction at the Terminal). These included events such as meetings, presentations and site tours.

**Public Enquiries:**

The Applicant put in place an enquiry and complaint reporting system. During this time period, 38 stakeholders contacted the Applicant and a total of 73 questions, comments or concerns were raised across 14 key themes. Top themes included construction safety boom, noise, viewscales and marine equipment staging. The Applicant responded to all issues in a timely manner and notified VFPA.

## 5.2 Public Consultation Conclusion

VFPA staff have reviewed the record of public consultation from 2017 and together with the additional public communication undertaken by the Applicant since August 2017 and the current 2019 PER process is of the view that the Project has adequately addressed the concerns raised by the public, provided that mitigation measures and conditions in the Permit are adhered to. .

## 6. INDIGENOUS CONSULTATION

VFPA reviewed the Project and determined that it may have the potential to adversely impact Indigenous rights. Therefore, Indigenous consultation was required.

### 6.1 Scope of Indigenous Consultation

In determining its approach to Indigenous consultation, VFPA relied on the Crown's Indigenous consultation process and the NEB review process, considered the NEB Recommendation Report, the Joint Federal/Provincial Consultation and Accommodation Report for TMEP, the Summary Assessment report for the BC Environment Assessment Office, the NEB TMEP Reconsideration Report February 2019 and the TMEP Crown Consultation and Accommodation Report June 2019, supplemental information from the Applicant and submissions from Indigenous groups.

A technical review of the application package has been undertaken as part of the Project and Environmental Review of this Project which included a review of the VFPA's previous Indigenous consultation record, the NEB TMEP Reconsideration Report February 2019 and the TMEP Crown Consultation and Accommodation Report June 2019. It was determined that the scope of further consultation with Indigenous groups would focus on the changes from the Project previously submitted and approved under PER No. 15-322.

In April 2017, Indigenous groups, were sent preliminary consultation letters to review pre-application material to provide an opportunity review material, identify concerns with the process, outline VFPA's approach to consultation.

As part of the formal PER process for PER No. 15-322, Indigenous consultation was undertaken, which began in June 2017 and was completed in September 2017. As part of this Project and Environmental Review for the Project, further Indigenous consultation was undertaken. Referral packages were sent in August 2019, which included a referral letter with a link to all relevant documents, general location map, project area map, a table summarizing issues raised and considered by the VFPA during its previous consultation regarding the Project, and a detailed project description with a table of concordance. To assist each Indigenous group in their review of the application, VFPA outlined the four changes between the current Project and that previously approved under PER No. 15-322 and also provided the summary of comments provided from that Indigenous group during the previous consultation process.

The following Indigenous groups were consulted:

- Cowichan Tribes
- Halalt First Nation
- Lake Cowichan First Nation
- Lyackson First Nation
- Musqueam Indian Band
- Penelakut Tribe
- Squamish First Nation
- Stz'uminus First Nation
- Tseil-Waututh First Nation
- Sto:lo Nations (People of the River Referral Office)

In its consultations, VFPA sought more detailed information on specific impacts to Indigenous rights in VFPA's jurisdiction and considered circumstances where proposed, site-specific activities resulting from the expansion of the Terminal could adversely impact existing or asserted Indigenous rights, and these impacts were unaddressed, unmitigated or could be further reduced by VFPA, within areas of its authority and jurisdiction. While marine shipping was not reviewed as part of the Applicant's proposed activities, the degree to which finalized design of the Terminal affected berthing and loading of tankers, and how this affected Indigenous groups' rights in the vicinity of the Terminal, was reviewed.

VFPA notes that through the Crown's reconsideration process, the Crown is of the view that consultation for TMEP was carried out in good faith and that the Crown's process of seeking to understand potentially outstanding issues and impacts was reasonable. VFPA received comments from two Indigenous groups as part of its consultation for this Project and Environmental Review of the Project. However, the Indigenous groups did not provide comments on potential impact(s) to their Indigenous interests regarding the changes to the Project nor were additional comments provided on potential impact(s) to their Indigenous interests for the original application. VFPA will continue to be open to engagement and dialogue with Indigenous groups beyond a Project decision.

VFPA reviewed the Crown's newly developed accommodations and identified opportunities to participate in these accommodations, where appropriate; examples include the Salish Sea Initiative and the Quiet Vessel Initiative.

VFPA determined that consultation with Indigenous groups during both the current PER process and the PER process undertaken in 2017, as documented in VFPA's consultation record and the CCAR 2019, allowed for informed decisions regarding the potential impacts on Indigenous interests for the Project.

The following table summarizes comments received by VFPA from Indigenous groups in 2017 and how they were considered as part of the Project and Environmental Review.

**Responses provided by Indigenous Groups**

Issue	Mitigations and Permit Conditions	Rationale
<p><b>Impacts of increased tanker traffic</b></p> <p>An Indigenous group inquired about the effects of increased tanker traffic, within and outside of VFPA-managed waters.</p>	<p>During the National Energy Board hearings for TMEP, VFPA assessed that it would be able to accommodate TMEP-related marine traffic in addition to other foreseeable commercial and recreational traffic, on most days of the year within port managed waters.</p> <p>Matters relating to marine shipping were not reviewed by VFPA as part of the Project and Environmental Review for the expansion and upgrade of the Terminal.</p>	<p>The impacts of increased marine shipping were assessed as part of the NEB Review, with impacts to Indigenous rights assessed by the Crown during consultations leading up to the decisions on Temp by Governor in Council. VFPA participated in these processes.</p> <p>VFPA will continue to regularly assess practices and procedures that promote safe and efficient navigation within its jurisdiction.</p>
<p><b>Increased vessel traffic</b></p> <p>An Indigenous group stated there would be adverse impacts to their rights in Burrard Inlet as result of vessel traffic, increased tanker and related support vessel traffic (i.e. tugs).</p>	<p>The environmental and socio-economic effects of Project-related tanker traffic, including the potential effects of accidents or malfunctions that may occur, were assessed by the NEB during its review of TMEP.</p> <p>Matters relating to marine shipping were not reviewed by VFPA as a part of the Project and Environmental Review for the expansion and upgrade of the Terminal.</p> <p>VFPA has addressed the impacts of increased construction related vessel traffic through a permit condition which requires the Applicant to submit a marine construction and staging plan for VFPA review and approval that addresses the following:</p> <ul style="list-style-type: none"> <li>• Staging and construction areas;</li> <li>• Dates and hours of operation;</li> </ul> <p>Description of activities taking place;</p>	<p>This residual effect was identified by the Crown during its consultations with Indigenous groups.</p> <p>The Applicant committed to adopting all 17 TERMPOL recommendations and 31 findings to maintain and enhance the existing marine safety regime, and provide for a higher level of safety for tanker operations appropriate to the increase in traffic.</p> <p>The Applicant’s commitments and mitigation measures related to education, communications, community outreach and support for navigation equipment will partially address residual concerns from Indigenous groups and ensure safe navigation and access.</p> <p>VFPA will be consulting with Indigenous groups through a separate process regarding the potential effects of increased anchorage utilization in eastern Burrard Inlet, both as a result of</p>

Issue	Mitigations and Permit Conditions	Rationale
	<ul style="list-style-type: none"> <li>• Participating equipment and vessels (dimensions must be included);</li> <li>• Method of preferred communication.</li> <li>• Proposals to accommodate Indigenous traditional marine resource use activities potentially affected by construction activities; and</li> <li>• Special requests and/or additional information.</li> </ul> <p>In addition, the following NEB conditions are relevant to addressing this concern:                      No. 1 – Condition compliance                      No. 2 - Compliance with commitments                      No. 48 – Navigation and navigation safety                      No. 97 – Traditional land use (TLU) and traditional marine resource use (TMRU) investigation report                      No. 98 – <i>Plan for Indigenous group participation in construction monitoring</i>                      No. 100 – <i>Heritage Resources and Sacred and Cultural Sites</i>                      No. 132 – <i>Marine Mammal Protection Programs</i>                      No. 134 - <i>Updated Tanker Acceptance Standard and Westridge Marine Terminal Regulations and Operations Guide</i></p>	<p>TMEP and due to other port operations.</p>
<p><b>Underwater noise from increased vessels in Burrard Inlet</b></p> <p>An Indigenous group stated that orca whales are a culturally important species and expressed concern they may be adversely impacted by, or discouraged from entering the Inlet due to underwater noise</p>	<p>The environmental and socio-economic effects of Project-related tanker traffic, including the potential effects of accidents or malfunctions that may occur, were assessed by the NEB during its review of TMEP.</p> <p>Matters relating to marine shipping were not reviewed by VFPA as a part of the Project and Environmental Review for the expansion and upgrade of</p>	<p>While VFPA did not assess underwater noise from increased marine shipping from the Terminal, VFPA is responsible for the Enhancing Cetacean Habitat and Observation (ECHO) Program. The ECHO Program is a VFPA-led initiative aimed at better understanding and managing the impact of shipping activities on at-risk whales throughout the southern coast of British Columbia. Some of the</p>

Issue	Mitigations and Permit Conditions	Rationale
<p>generated from increased vessel traffic.</p>	<p>the Terminal. Potential effects of underwater noise during construction was assessed by the NEB during its review of TMEP. VFPA does not have any additional conditions to further reduce potential effects.</p> <p>In addition, the following NEB conditions are relevant to addressing this concern: No. 44 – Wildlife Species at Risk Mitigation and Habitat Restoration Plans No. 81 – Westridge Marine Terminal Environmental Protection Plan</p>	<p>key threats to whales in this region include: acoustic disturbance (underwater noise), physical disturbance (ship collisions), environmental contaminants, and the availability of prey. The ECHO Program has structured its focus areas around the effects of shipping and port activities and the specific threat categories of acoustic disturbance, physical disturbance and environmental contaminants. VFPA’s Habitat Enhancement Program is focused on creating and enhancing fish and wildlife habitat, which will also help address the threat of ‘availability of prey’. The ECHO Program’s long-term goal is to develop mitigation measures that will lead to a quantifiable reduction in potential threats to whales as a result of shipping activities.</p> <p>The ECHO Program in itself is not a mitigation measure, however, to date the ECHO Program has added vessel underwater noise reduction criteria to the port’s EcoAction incentive program to include harbour dues rate discounts for quieter ships. In 2015, the ECHO Program and partners deployed an underwater noise listening station under the inbound shipping lane in the Strait of Georgia to provide a better understanding of the noise levels coming from different vessels. To date, this system has measured over 3000 vessel signatures, building one of the most comprehensive vessel source level data sets in the world. The Program has also developed a Mariner’s Guide to Whales of Western Canada which helps mariners identify key cetacean species, understand the potential threats their vessels</p>

Issue	Mitigations and Permit Conditions	Rationale
		<p>pose to these species and take action to minimize those threats. To date over 600 copies of the guide have been distributed to west coast mariners. The ECHO Program is currently in a phase of advancing scientific studies to support decisions on potential mitigation. In particular, the ECHO Program has convened many industry partners to participate in a first of its kind in the world voluntary vessel slowdown research trial to explore the relationship between slower vessel speeds, underwater noise and effects on killer whales. The outcomes of this and other ECHO Program research will help inform future actions to reduce vessel related impacts and support the recovery of at-risk whale populations.</p> <p>Unrelated to the Project, VFPA is exploring opportunities for greater involvement of the concerned Indigenous group in monitoring underwater noise levels in Burrard Inlet.</p>
<p><b>Accelerated Shoreline Erosion</b> An Indigenous group expressed concern regarding potential impacts to the shoreline, and to cultural sites and reserve lands along the shoreline, from increased wake due to increased tanker and tug traffic and climate change.</p>	<p>The environmental and socio-economic effects of Project-related tanker traffic, including the potential effects of accidents or malfunctions that may occur, were assessed by the NEB during its review of TMEP.</p> <p>Matters relating to marine shipping were not reviewed by VFPA as a part of the Project and Environmental Review for the expansion and upgrade of the Terminal.</p> <p>While the NEB Report and the Applicant maintain that wake does not contribute to shoreline erosion, the following NEB conditions may partially</p>	<p>While Transport Canada does not regulate vessel wake, VFPA may set speed limits within its jurisdictional boundaries, and vessel operators can use their discretion to manage wake by modifying vessel speed.</p> <p>Additionally, the Port Information Guide states that every vessel or ship in the port shall at all times ensure that wake and wash from a vessel or ship are not to cause a risk to the safety of life or damage to property. Therefore, any reports of vessels not controlling their wake can be made to our 24/7 Operations Centre.</p> <p>The Applicant has stated that they do not believe that marine</p>

Issue	Mitigations and Permit Conditions	Rationale
	<p>address this concern:                      No. 1 – Condition compliance                      No. 2 - Compliance with commitments                      No. 3 – Environmental protection                      No. 96 - Reports on engagement with Indigenous groups – construction                      No. 97 – Traditional land use (TLU) and traditional marine resource use (TMRU) investigation report                      No. 145 – Community Benefits Program progress reports</p> <p>In response to climate change concerns, Governor in Council determined that GHG emissions from TMEP would not impact emissions projections underpinning the plan to meet or exceed Canada’s 2030 GHG emissions targets.</p>	<p>tankers will cause shoreline erosion because tankers moving at conventional shipping speeds do not create erosion-causing wakes. Tankers typically travel at 12-15 knots in more open port areas and at sea. Tankers will not be travelling at this speed east of the Second Narrows, which is the area considered for the application scope. According to Applicant submissions during the NEB Review, vessel wakes only cause shoreline erosion when the height of the wake is higher than the height of natural waves (i.e., waves caused by high speed vessels).</p>
<p><b>Impacts to navigation</b>                      An Indigenous group expressed concern that a combination of additional tanker traffic, expanded water lot footprint and increased utilization of berths and anchorages in the vicinity of the Terminal will adversely impact their ability to navigate the waters for traditional purposes.</p>	<p>The environmental and socio-economic effects of Project-related tanker traffic, including the potential effects of accidents or malfunctions that may occur, were assessed by the NEB during its review of TMEP. Matters relating to marine shipping were not reviewed by VFPA as a part of the Project and Environmental Review for the expansion and upgrade of the Terminal.</p> <p>VFPA has relied upon the following NEB conditions are relevant to addressing this concern:                      No. 1 – Condition compliance                      No. 2 - Compliance with commitments                      No. 48 – Navigation and navigation safety plan</p>	<p>This residual effect was identified by the Crown during its consultations with Indigenous groups. The Applicant’s commitments and mitigation measures related to education, communications, community outreach and support for navigation equipment will partially address residual concerns from Indigenous groups and ensure safe navigation and access. VFPA will be consulting with Indigenous groups through a separate process regarding the potential effects of increased anchorage utilization in eastern Burrard Inlet, both as a result of TMEP and due to other port operations. VFPA expects to discuss potential impacts to navigation as a component of this consultation.</p>

Issue	Mitigations and Permit Conditions	Rationale
	<p><i>No. 133 – Confirmation of marine spill prevention and response commitments - Marine shipping-related commitments</i></p> <p><i>No. 97 – Traditional Land Use (TLU) and Traditional Marine Resource Use (TMRU) Investigation Report</i></p> <p><i>No. 98 – Plan for Indigenous group participation in construction monitoring</i></p> <p><i>No. 134 - Updated Tanker Acceptance Standard and Westridge Marine Terminal Regulations and Operations Guide</i></p>	
<p><b>Cumulative effects of projects within VFPA jurisdiction</b></p> <p>An Indigenous group expressed concern about the cumulative impacts of new projects within VFPA jurisdiction.</p>	<p>Cumulative effects of the Project were assessed by the NEB during its review of TMEP.</p>	<p>While VFPA does not have a legislative requirement to explicitly consider cumulative effects, the past and current effects of development on the environment provide the context for Project and Environmental Reviews.</p>
<p><b>National Energy Board Conditions for the Terminal</b></p> <p>An Indigenous group asked how VFPA would take into account NEB Conditions that address potential impacts to rights, within VFPA jurisdiction.</p>	<p>During the Project and Environmental Review process for the expansion of the Terminal, VFPA looked to NEB conditions, proponent commitments and the existing regulatory regime to address any potential impacts to rights. Where necessary, VFPA sought clarification from the NEB or other regulators on conditions imposed that addressed potential effects from the construction and operation of the Terminal.</p> <p>VFPA developed permit conditions and mitigations to address its obligations under the <i>Canada Marine Act</i> in response to concerns from Indigenous groups, where possible.</p>	<p>VFPA recognizes that the NEB is the federal regulator responsible for adjudicating Kinder Morgan’s compliance with conditions imposed as part of the NEB-issued Certificate of Public Convenience and Necessity for TMEP, which includes the Terminal.</p> <p>VFPA understands that conditions compliance issues are actively being discussed between Indigenous groups and the Crown, within the context of the Indigenous Advisory &amp; Monitoring Committee (IAMC) for TMEP. While VFPA is not a member of the IAMC, VFPA welcomes feedback from the IAMC and/or Indigenous groups on how VFPA may be involved in the future.</p>
<p><b>Spill response plans</b></p>	<p>VFPA is relying upon what has been publically communicated and accepted by the Crown in</p>	<p>The preparedness and response to oil spills from terminals are regulated under different</p>

Issue	Mitigations and Permit Conditions	Rationale
<p>An Indigenous group inquired whether VFPA would be reviewing oil spill documents that were conditioned and reviewed by the NEB. For oil spill response plans, an Indigenous group also asked what factors VFPA would weigh in reviewing, approving or rejecting plans.</p>	<p>the CAR and by the GIC in its approval of TMEP. The Crown explicitly accepted the findings of the NEB regarding the probability and magnitude of a spill, and the ability of the existing and enhanced regulatory regime to respond and compensate. VFPA’s review of the application includes an assessment of the terminal’s spill prevention and response components pertaining to vessel operations, which includes vessel loading and the interface between ship and shore. VFPA assessed Kinder Morgan’s Emergency Response Plan to ensure the provision and deployment of physical resources is appropriate and commensurate with the Crown’s accepted conclusions. VFPA also ensured that the deployment of the oil spill resources from the terminal would be consistent with VFPA’s statutory obligations under the <i>Canada Marine Act</i> and the Port Authorities Operating Regulations. VFPA’s review also ensured appropriate spill prevention mitigations are in place that are consistent with international standards and industry best practices.</p> <p>From an impacts to rights perspective, VFPA, consistent with the Crown, relied upon the following NEB conditions to mitigate impacts:                      No. 1 – Condition compliance                      No. 2 – Compliance with commitments                      No. 4 – Engineering and safety                      No. 22 – Updated terminal</p>	<p>regimes depending on the source of the spill. If the spill occurs during the transfer of oil while a ship is at the terminal, the spill is regulated by Transport Canada. Other types of spills from the terminal are regulated by the NEB. Oil handling facilities are required to have pollution prevention plans in place that outline their compliance with the Vessel Pollution and Dangerous Chemical Regulations and how they will prevent discharges while engaged in transfer operations with prescribed vessels. Transport Canada inspects Westridge annually to ensure compliance with requirements for safe transfers of oil. VFPA notes that the International Safety Guide for Oil Tankers and Terminals (ISGOTT) Ship/Shore Safety Check-List must be used in the transfer of Bulk Liquid cargoes from marine facility to vessel (ship-to-shore), as set out in the Port Information Guide.</p>

Issue	Mitigations and Permit Conditions	Rationale
	<p>assessments</p> <p>No. 24 – Secondary containment – Burnaby Terminal</p> <p>No. 33 – Westridge Marine Terminal onshore geotechnical report</p> <p>No. 34 – Westridge Marine Terminal offshore geotechnical report</p> <p>No. 63 – Security programs</p> <p>No. 64 – Safety manuals</p> <p>No. 81 – Westridge Marine Terminal Environmental Protection Plan</p> <p>No. 84 – Emergency release system at the Westridge Marine Terminal</p> <p>No. 89 – Emergency response plans for construction</p> <p>No. 90 – Consultation on improvements to Trans Mountain’s Emergency Management Program</p> <p><i>No. 91 – Plan for marine spill prevention and response commitments</i></p> <p>No. 97 – Traditional Land Use (TLU) and Traditional Marine Resource Use (TMRU) Investigation Report</p> <p>No. 98 – Plan for Indigenous group participation in construction monitoring</p> <p>No. 118 - Firefighting capacity at terminals</p> <p>No. 119 – Emergency preparedness and response exercise and training program</p> <p>No. 121 – Financial Assurances Plan – operations phase</p> <p>No. 124 – Implementing improvements to Trans Mountain’s Emergency Management Program</p> <p>126 – Emergency Response Plan for the Westridge Marine Terminal</p> <p><i>No. 127 - Terminal fire protection and firefighting systems</i></p>	

Issue	Mitigations and Permit Conditions	Rationale
	<p>No. 129 - Final terminal risk assessments                      No. 133 – <i>Confirmation of marine spill prevention and response commitments - Marine-shipping related commitments</i>                      No. 134- <i>Updated Vessel Acceptance Standards and Westridge Marine Terminal Regulations and Operations Guide</i>                      No. 136 – <i>Pre-operations full-scale emergency response exercises</i></p> <p>VFPA has assessed the Applicant’s spill response plans as being adequate.</p>	
<p><b>Human health concerns</b>                      An Indigenous group stated it was concerned about the impacts of the terminal operations and spilled oil on human health.</p>	<p>None required</p>	<p>Potential effects of project operations on human health was assessed by the NEB during its review of TMEP. VFPA does not have any additional conditions to further reduce potential effects.</p>
<p><b>Visual and acoustic impacts</b>                      An Indigenous group noted their concerns with noise, light and visual impacts of the expanded terminal.</p>	<p>Potential effects of the project operations on noise, light, and visual impacts were assessed by the NEB during its review of TMEP.                      The VFPA permit includes a condition requiring that lights be adjusted, if needed during operations, to mitigate any adverse effects on fish, wildlife, and neighbouring residents.                      VFPA has permit conditions that relate specifically to noise levels resulting from construction activities.</p>	<p>Potential effects of project operations’ visual and acoustics impacts were assessed by the NEB during its review of TMEP. VFPA included additional conditions to further reduce potential effects.</p>
<p><b>Stormwater management</b>                      An Indigenous group noted their concern with potential impacts to water quality in Burrard Inlet as a result of stormwater outfalls from the terminal.</p>	<p>The VFPA permit includes a condition that requires the Applicant update the stormwater pollution prevention plan to address the technical comments provided by an Indigenous group during the review.</p>	<p>VFPA assessed that the technical comments strengthened the efficacy of the pollution prevention plan.</p>

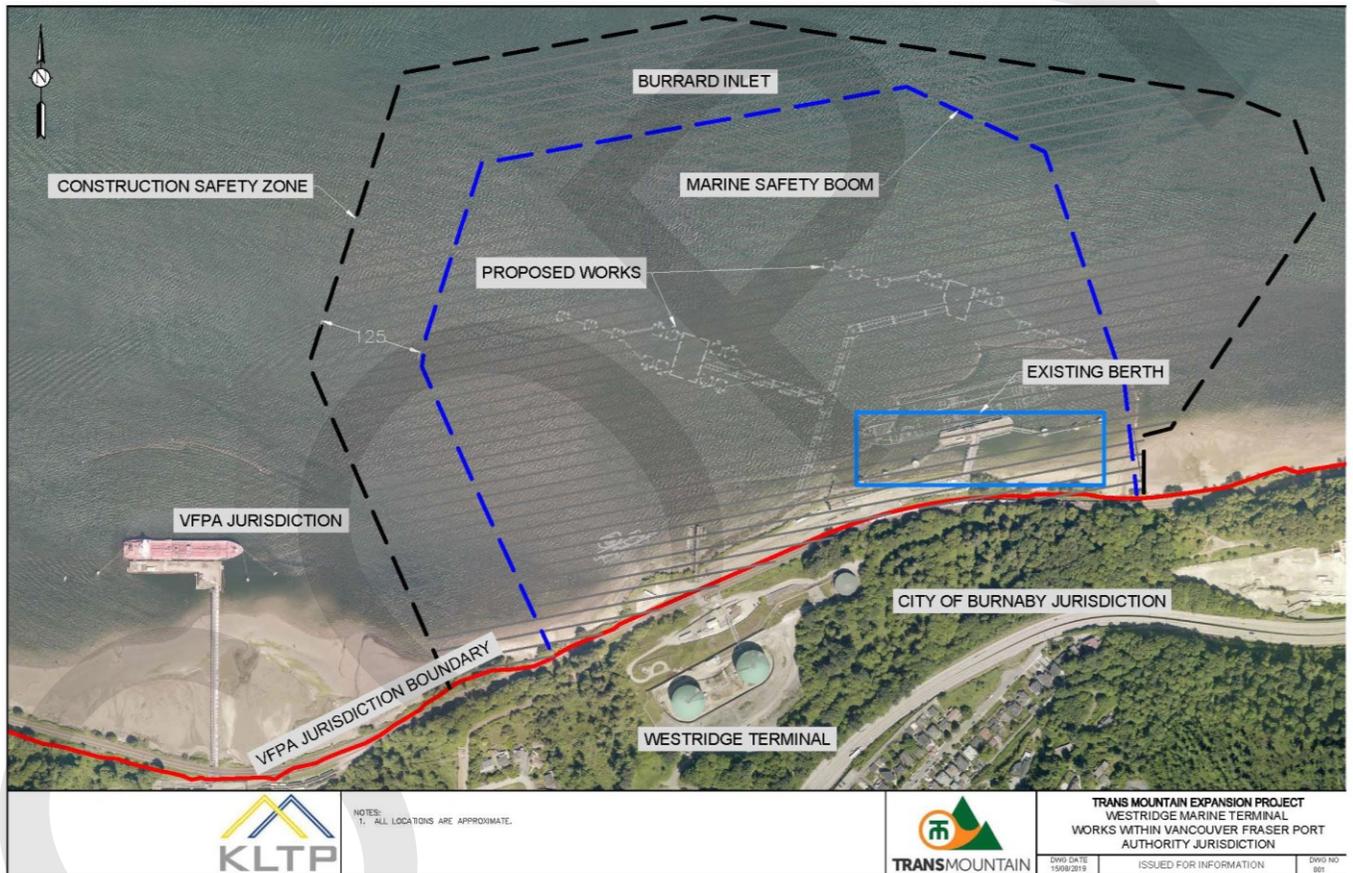
Issue	Mitigations and Permit Conditions	Rationale
	NEB condition 151 addresses post-construction environmental monitoring, which may also partially address this concern.	
<p><b>Fish and fish habitat</b>                      Indigenous groups questioned the efficacy of proposed offsetting measures for habitat impacted by the expansion of The Terminal.                      An Indigenous group noted its concerns with impacts to Dungeness crab.</p>	<p>VFPA notes that an authorization is required from Fisheries and Oceans Canada under the <i>Fisheries Act</i> for habitat impacted by the expanded terminal.                      VFPA does not have any additional conditions to further reduce potential effects.                      VFPA notes that the Applicant committed to instituting a crab salvage and relocation program which is described in the Westridge Marine Terminal Environmental Protection Plan (WMT (EPP) - NEB Condition 81.</p>	<p>DFO is considering incremental measures to address residual impacts to fishing rights as a result of a loss of fish and fish habitat, as a result of the expanded Terminal.</p>
<p><b>Recognition of governance and stewardship rights</b>                      An Indigenous group asked that VFPA recognize their governance and stewardship rights, partially in the form of joint decision making for the Project.</p>	<p>This issue is outside of VFPA’s PER review for the Project.                      VFPA understands these issues are actively being discussed between Indigenous groups and the Crown, within the context of Canada’s Oceans Protection Plan (OPP), the Indigenous Advisory &amp; Monitoring Committee (IAMC) for TMEP and Indigenous and Northern Affairs Canada (INAC) Exploratory Tables on self-government.</p>	<p>VFPA acknowledges Indigenous groups’ desire for the recognition of their governance and stewardship rights in accordance with their own laws.                      VFPA considered how this desire might be recognized through the PER review of the Project and in accordance with current legal context and VFPA’s authority and jurisdiction.                      VFPA is considering incremental measures to address residual impacts to cultural/other rights as a result</p>

## 7. CONCLUSION & RECOMMENDATION

In completing the project and environmental review, VFPA concludes that with the implementation of proposed mitigation measures and conditions described in the Permit, the Project has appropriately addressed all identified concerns.

It is the recommendation of staff that this application be approved subject to conformance with the project and environmental conditions listed in project permit PER No. 19-162.

## APPENDIX A Location Plan



**APPENDIX B**  
**List of Information Sources**

**VFPA has relied on the following sources of information in the project and environmental review of the Project:**

- Application form and materials submitted by Applicant on August, 9, 2019.
- All Project correspondence from August, 9, 2019 to month, day 2019
- All plans and drawings labelled PER No.19-162-A1 to A49
- "Project Description", dated August 2019;
- "Project Addendum", dated August 2019;
- "Hazardous Materials Technical Report", dated May, 2017;
- "Geotechnical Technical Report", dated May, 2017; including:
  - Appendix G - Geotechnical Engineering Report – Preliminary Recommendations Marine Facilities, Westridge Marine Terminal", dated February 10, 2017, prepared by Shannon & Wilson Inc.;
- "Stormwater Technical Report", dated May, 2017;
- "Marine Traffic Technical Report", dated May, 2017;
- "In-Water Excavation Technical Report", dated May, 2017;
- "Noise Technical Report – Construction", dated May, 2017;
- "Air Technical Report – Construction", dated May, 2017;
  - Air Technical Report Memo, dated October 2017
- "Fish Habitat Offset Plan", dated May, 2017;
- "Project Energy Technical Report", dated May, 2017;
- "Visual and Shade Impact Technical Report", dated May, 2017;
- "Light Technical Report", dated May, 2017;
- "Archaeological Overview Assessment", dated May, 2017;
- "Construction Environmental Management Plan", dated May, 2017;
  - Addendum to Environmental Protection Plan, dated October 2017
- "Environmental Protection Plan Change Logs", dated August 2017, January 2018, March 2018 & July 2018;
- "Environmental Technical Report", dated May, 2017;
- "Soil and Sediment Technical Report", dated May, 2017;
- "Human Health Risk Assessment", dated May, 2017;
- "Emergency Response Plan", dated October, 2018;
- "Fire Risk Assessment Technical Report", dated May, 2017;
- "Riparian Habitat Mitigation Plan", dated May, 2017;
- "Clearing, Erosion, Sediment Control Plan Phase 1 and 2", dated April 2018;
- "Aboriginal Consultation Technical Report", dated February, 2017;
- "Indigenous Engagement Update", dated August, 2019;
- "Consultation Summary", dated June, 2017;
- "Public Consultation Summary Report", dated August 2019
- "Westridge Marine Terminal Construction Communications Plan", dated August, 2019;
- Memo titled "Request to amend PER VFPA 15-322 Condition 37 Noise Limits for Westridge Marine Terminal Construction", April 1, 2019, author Matt Johnston, RWDI Noise Consultant;
- Memo titled "PER 15-322 Request for Extension of Work Hours", April 1, 2019;
- Utility Dock Temporary Relocation Request Memo, dated November, 2017